LPDES PERMIT NO. LA0071382, AI No. 9061

LPDES FACT SHEET and RATIONALE
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

I. Company/Facility Name: Westlake Polymers LP
Poly I & II Polyethylene Production Facility
Post Office Box 3508
Sulphur, Louisiana 70664

II. Issuing Office: Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313

III. Prepared By: Jenniffer Sheppard
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Date Prepared: March 8, 2005
Revised on December 13, 2005 and February 16, 2006

IV. Permit Action/Status:

A. Reason For Permit Action:

Proposed reissuance of an administratively continued Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46*.

* In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401-402, and 404-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC Chapter 11) will not have dual references.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.4901, 4903, and 2301.F.

B. NPDES permit - NPDES permit effective date: N/A
NPDES permit expiration date: N/A

EPA has not retained enforcement authority

C. LPDES permit - LPDES permit effective date: April 1, 2000
LPDES permit expiration date: March 31, 2005

D. Application received on September 30, 2004. Addendum to application dated August 16, 2005.

V. Facility Information:

A. Location - 3525 Cities Services Highway in Sulphur, Calcasieu Parish

B. Applicant Activity -

According to the application, Westlake Polymers LP, Poly I & II Polyethylene Production Facility, is a polyethylene production facility that polymerizes ethylene gas to polyethylene polymer using a high pressure process.

Ethylene is pumped to an autoclave reactor by reciprocating compressors, and peroxides or other initiators are used to control the reaction rate. The polyethylene and unreacted ethylene from the reactor are sent to the separating vessels. The ethylene is then recycled to the process, while the molten polyethylene is routed to an extruder for pelletizing.

The pellets are blended and packaged prior to shipment. Vinyl acetate is used in some grades to produce a copolymer.

C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401-402, and 404-471 have been adopted by reference at LAC 33:IX.4903)

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414 Subparts D & J
Process Flow -	
Outfall 007 - 0.1965 MGD	
Outfall 010 - 0.1757 MGD	
Total = 0.3722 MGD	

Other sources of technology based limits:
LDEQ Stormwater Guidance, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).
Best Professional Judgement

D. Fee Rate -
1. Fee Rating Facility Type: Major
2. Complexity Type: VI
3. Wastewater Type: II
4. SIC code: 2821

E. Continuous Facility Effluent Flow-
Outfalls 007 and 010 - 1.201 MGD.

VI. Receiving Waters: unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River

1. TSS (15%), mg/L: 9.65
2. Average Hardness, mg/L $CaCO_3$: 888.1
3. Critical Flow, cfs: 31.15 [*1]
4. Mixing Zone Fraction: 1
5. Harmonic Mean Flow, cfs: 93.45 [*1]
6. River Basin: Calcasieu River, Segment No. 030901
7. Designated Uses:
   The designated uses are primary contact recreation, secondary contact recreation, and fish and wildlife propagation.

Information based on the following: Water Quality Management Plan, Volume 5A, 1994; LAC 33:IX Chapter 11;/Recommendation(s) from the Engineering Section. Hardness and 15% TSS data come from the ambient monitoring station 848 near the Highway 108 bridge, 1 mile south of I-10 exit #24, 5.4 miles west of Lake Charles, 4.1 miles NE of Carlyss, on Bayou D'Inde south of Sulphur listed in Hardness and TSS Data for All LDEQ Ambient Stations for the Period of Record as of March 1998, LeBlanc. This data is also located in a memo dated February 14, 2005, from Robert Lott of LDEQ's Engineering Section to Jenniffer Sheppard.

[*1] The mixing zones of Outfalls 007 and 010 overlap, therefore, the critical flow and harmonic mean were divided on a flow weighted basis.

Outfall 007 - Harmonic Mean Flow, cfs: 52.332
Critical Flow, cfs: 17.444

Outfall 010 - Harmonic Mean Flow, cfs: 41.118
Critical Flow, cfs: 13.706

VII. Outfall Information:

Outfall 007 (Interim and Final)

A. Type of wastewater - the discharge of treated process wastewater from Poly II including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow waster; process area stormwater; non-process area stormwater including runoff from the centerline of the Equistar Chemical LP road located to the immediate west; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, steam production, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and cooling tower pump seal leakage and drift water.

B. Location - at the point of discharge from the treatment facility in the southeast corner of the facility, upstream from Outfall 010, prior to combining with other waters of the east ditch, at Latitude 30°11'47", Longitude 93°19'34".

C. Treatment - treatment of process wastewaters consists of:
- flotation
- screening
- discharge to surface water

D. Flow - Continuous Flow 0.6783 MGD.

Process Wastewater*	0.1965 MGD
Utility Wastewater*	0.3312 MGD
Non-process Area Stormwater*	0.1506 MGD

* Specific component waste streams are defined at Appendix A-1.

E. Receiving waters - unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River

F. Basin and segment - Calcasieu River Basin, Segment 030901

G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 010 (Interim and Final)

A. Type of wastewater - the discharge of treated process wastewater from Poly I including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow waster; process area stormwater; non-process area stormwater; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and laboratory wastewater.

B. Location - at the point of discharge from the treatment facility, at the northeast corner of the facility, prior to combining with other waters of the east ditch, at Latitude 30°11'56", Longitude 93°19'33".

C. Treatment - treatment of process wastewaters consists of:
- flotation
- screening
- discharge to surface water

D. Flow - Continuous Flow 0.5227 MGD.

Process Wastewater*	0.1757 MGD
Utility Wastewater*	0.265 MGD
Non-process Area Stormwater*	0.082 MGD

* Specific component waste streams are defined at Appendix A-2.

E. Receiving waters - unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River

F. Basin and segment - Calcasieu River Basin, Segment 030901

G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 011

A. Type of wastewater - the discharge of non-process area stormwater (including stormwater runoff from the centerline of the Equistar road located to the immediate west); intermittent post first-flush stormwater from Poly I & II process and non-process areas (during storm events of high intensity and/or extended duration; overflow may occur after 1.25 inches of rainfall into sumps 002 and 003 and after 2.0 inches into sump 008); and miscellaneous de minimis discharges including excess well water, fire system test water, cooling tower pump seal leakage and drift, and eye wash and shower station water.

B. Location - at the point of discharge into the northwestern portion of the west ditch, prior to combining with other waters, at Latitude 30°12'00", Longitude 93°19'39".

C. Treatment - None

D. Flow - Intermittent

E. Receiving waters - unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River

F. Basin and segment - Calcasieu River Basin, Segment 030901

Outfall 012

A. Type of wastewater - the discharge of the previously monitored effluents authorized for discharge through Outfalls 007 and 010; the intermittent discharge of non-process area stormwater including stormwater runoff from the undeveloped grassy area of the Equistar property to the immediate south; miscellaneous de minimis discharges including fire system test water, eye wash/safety shower water, and firewater storage tank intermittent overflow (well water); and low contamination potential stormwater from former Outfalls 004, 005, and 006.

B. Location - at the point of discharge into the eastern ditch, prior to combining with other waters, at Latitude 30°12'01", Longitude 93°19'33".

C. Treatment - None

D. Flow - Continuous Flow 1.201 MGD.

Previously Monitored Wastewater from Outfalls 007 and 010*	1.201 MGD
Utility Wastewater*	De minimis
Non-process Area Stormwater*	Intermittent

E. Receiving waters - unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River

F. Basin and segment - Calcasieu River Basin, Segment 030901

G. Effluent Data - The effluent data are contained in Appendix C.

VIII. Proposed Permit Limits:

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in the Permit Limit Rationale section below.

Summary of Proposed Changes From the Current NPDES Permit:

A. Outfall 010 (Interim and Final) - A daily maximum water quality based limitation was assigned for 1,3-Dichloropropylene and a technology based limitation for the monthly average. The monitoring frequency has increased from 1/year to 1/quarter.

B. Outfall 012 - newly created outfall covering the discharge of the previously monitored effluents authorized for discharge through Outfalls 007 and 010; the intermittent discharge of non-process area stormwater including stormwater runoff from the undeveloped grassy area of the Equistar property to the immediate south; miscellaneous de minimis discharges including fire system test water, eye wash/safety shower water, and firewater storage tank intermittent overflow (well water); and low contamination potential stormwater from former Outfalls 004, 005, and 006.

C. The low contamination potential stormwater outfalls, previously designated as Outfalls 004, 005, and 006 were consolidated into Outfall 012.

D. Outfall 011 - Monitor and report requirements were established at this outfall for Total Copper, Total Lead, Total Cadmium, Total Zinc, and Total Phenols based on analytical data, submitted in the September 2004 LPDES permit renewal application. Values presented were well above minimum quantification levels (MQLs).

E. Outfall 012 - Monitor and report requirements were established at this outfall for Total Copper, Total Lead, and Total Zinc based on analytical data, submitted in the September 2004 LPDES permit renewal application. Values presented were well above minimum quantification levels (MQLs).

F. Outfalls 007 and 010 (Interim) - Report only monitoring requirements have been placed in this permit for total copper, PCBs, tetrachloroethane, bromoform, and total mercury. These parameters were incorporated due to the Upper Calcasieu Estuary TMDL for Toxics issued in the Federal Register on June 13, 2002. Hexachlorobenzene and Hexachlorobutadiene are also considered TMDL parameters under the Calcasieu Estuary TMDL for Toxics, but were assigned the pre-TMDL water quality based limitations they would have received based on the standards. The report only requirements and pre-TMDL water quality based limitations mentioned above will expire on June 12, 2008.

G. Outfalls 007 and 010 (Final) - Monthly average mass limits for total copper, PCBs, tetrachloroethane, hexachlorobutadiene, bromoform, hexachlorobenzene, and total mercury and have been incorporated due to the Upper Calcasieu Estuary TMDL for Toxics issued in the Federal Register on June 13, 2002. These effluent limits are proposed to commence on June 13, 2008.

Federal regulations under 40 CFR 130.7 require the State to incorporate all final TMDLs into its current Water Quality Management Plan (WQMP). The State is also required to ensure consistency with the WQMP requirements approved by EPA under Section 208(b) of the Clean Water Act (CWA), as cited under LAC 33.IX.2707.D.6. Since the requirements established in the Final TMDL (Federal Register Notice: Volume 67, Number 114, pages 40735 - 40737, 6/13/2002) are water quality-based effluent limitations that are part of the State's current Water Quality Management Plan (Volume 8), and are more stringent than the technology based effluent limitations, the TMDL waste load allocations must remain in the permit

IX. Permit Limit Rationale:

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII.

1. Outfall 007 - the discharge of treated process wastewater from Poly II including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow waster; process area stormwater; non-process area stormwater including runoff from the centerline of the Equistar Chemical LP road located to the immediate west; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, steam production, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and cooling tower pump seal leakage and drift water.

Westlake Polymers LP, Poly I & II Polyethylene Production Facility is subject to Best Practicable Control Technology Currently Available (BPT) and Best

Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Organic chemical manufacturing	40 CFR 414, Subpart(s) D and J.

Calculations and basis of permit limitations are found at Appendix A and associated appendices. See below for site-specific considerations.

Site-Specific Consideration(s)

The Bayou D'Inde Dissolved Oxygen TMDL (July 1, 2002) states that this waterbody is meeting its uses at the existing loadings, therefore BOD_5 is proposed without increment.

Parameter	**Current Permit Limits**		**Calculated Tech. & WQ Permit Limits** (based on production increase)		**Proposed Permit Limits**	
	Monthly Avg lbs/day	Daily Max lbs/day	Monthly Avg lbs/day	Daily Max lbs/day	Monthly Avg lbs/day	Daily Max lbs/day
BOD_5	48	113	59	145	48	113

2. Outfall 010 - the discharge of treated process wastewater from Poly I including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow waster; process area stormwater; non-process area stormwater; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and laboratory wastewater.

Westlake Polymers LP, Poly I & II Polyethylene Production Facility is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Organic chemical manufacturing	40 CFR 414, Subpart(s) D and J.

Calculations and basis of permit limitations are found at Appendix A and associated appendices. See below for site-specific considerations.

Site-Specific Consideration(s)

NONE

3. Outfall(s) 011 and 012 - Stormwater & Miscellaneous Deminimis Utility Wastewaters

* Outfall 011 - the discharge of non-process area stormwater (including stormwater runoff from the centerline of the Equistar road located to the immediate west); intermittent post first-flush stormwater from Poly I & II process and non-process areas (during storm events of high intensity and/or extended duration; overflow may occur after 1.25 inches of rainfall into sumps 002 and 003 and after 2.0 inches into sump 008); and miscellaneous de minimis discharges including excess well water, fire system test water, cooling tower pump seal leakage and drift, and eye wash and shower station water.

* Outfall 012 - the discharge of the previously monitored effluents authorized for discharge through Outfalls 007 and 010; the intermittent discharge of non-process area stormwater including stormwater runoff from the undeveloped grassy area of the Equistar property to the immediate south; miscellaneous de minimis discharges including fire system test water, eye wash/safety shower water, and firewater storage tank intermittent overflow (well water); and low contamination potential stormwater from former Outfalls 004, 005, and 006.

The following limitations were established in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6) and on BPJ.

Parameter	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
TOC	N/A	50 mg/L
Oil and Grease	N/A	15 mg/L
Total Copper	N/A	Report
Total Lead	N/A	Report
Total Cadmium(*)	N/A	Report
Total Zinc	N/A	Report
Total Phenols(*)	N/A	Report
pH, Std. Units	6.0 (min)	9.0 (max)

(*) To be monitored at Outfall 011 only.

Site-Specific Consideration(s)

Outfall 011 - Total Copper, Total Lead, Total Cadmium, Total Zinc, and Total Phenols were incorporated based on analytical data for this outfall, submitted in the September 2004 LPDES permit renewal application. Values presented were well above minimum quantification levels (MQLs).

Outfall 012 - Total Copper, Total Lead, and Total Zinc were incorporated based on analytical

data for this outfall, submitted in the September 2004 LPDES permit renewal application. Values presented were well above minimum quantification levels (MQLs).

In accordance with LAC 33:IX.2707.I.3 and LAC 33:IX.2707.I.4 [40 CFR 122.44(I)(3) and (4)], a Part II condition is proposed for applicability to all storm water discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet flow. The Part II condition requires a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit, along with other requirements. If the permittee maintains other plans that contain duplicative information, those plans could be incorporated by reference to the SWP3. Examples of these type plans include, but are not limited to: Spill Prevention Control and Countermeasures Plan (SPCC), Best Management Plan (BMP), Response Plans, etc. The conditions will be found in the draft permit. Including Best Management Practice (BMP) controls in the form of a SWP3 is consistent with other LPDES and EPA permits regulating similar discharges of stormwater associated with industrial activity, as defined in LAC 33:IX.2522.B.14 [40 CFR 122.26(b)(14)].

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations and/or specific analytical results from the permittee's application were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. Calculations, results, and documentation are given in Appendix B.

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation are given in Appendix B.

The following pollutants received water quality based effluent limits:

Total Copper
Total Mercury
Hexachlorobutadiene
PCB - 1254
1,1,2,2-Tetrachlorethane
Bromoform
Hexachlorobenzene
1,3 - Dichloropropylene

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They

are also listed in Part II of the permit.

To protect against the potential for discharges of the TMDL pollutants, copper, mercury, hexachlorobenzene, hexachlorobutadiene, and PCB-1254 at levels above that of state water quality standards, and for discharges of copper, mercury, hexachlorobenzene, hexachlorobutadiene, and PCB-1254 at levels exceeding state water quality standards, site specific MQL's were developed for these parameters.

$$\text{MQL (mg/L)} = \frac{\text{TMDL assigned Loading for Chemical X}}{\text{Flow used in TMDL x 8.34 conversion factor}}$$

MQL (μg/L) = MQL (mg/L)x 1000

Compounds	Combined TMDL Loading for Outfalls 007 and 010 (lbs/day)	Flow (MGD)	Conversion Factor	MQL Detection Limit μg/L
Copper	0.122	1.60436	8.34	9.118
Mercury	0.000841	1.60436	8.34	0.063
PCB -1254	0.000001220	1.60436	8.34	0.000091
Hexachlorobenzene	0.0000305	1.60436	8.34	0.002279
Hexachlorobutadiene	0.01300	1.60436	8.34	0.972

Should an EPA approved test method not be available to achieve the stated detection level, then the most sensitive EPA approved method is required, and the permittee can record zero or a less than value on the DMR in the event that the analytical result is less than the detection limit of the most sensitive method.

TMDL Waterbodies

Outfall 007, 010, 011, and 012

The discharges from Outfalls 007, 010, 011, and 012 include treated process wastewater and process area stormwater, utility wastewater, low contamination potential stormwater, and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and cooling tower pump seal leakage and drift water are to an unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River, Segment No. 030901. Bayou D'Inde is listed on the 1998 303(d) report as being impaired with pathogen indicators, copper, PCBs, priority organics, oil & grease, non-priority organics, other inorganics, organic enrichment/low DO, nutrients, nickel, phosphorus, contaminated sediments, and mercury. The 2002 list of impaired waterbodies addressed the copper, mercury, PCBs, priority organics, and contaminated sediment impairments through The Upper Calcasieu Estuary Toxics TMDL, issued June 13, 2002. Organic enrichment/low DO, nutrients, and phosphorus were addressed by an LDEQ TMDL for dissolved oxygen.

Pathogen Indicators, oil and grease, non-priority organics, and other inorganics were officially delisted. New data shows attainment for the nickel impairment.

Copper, Mercury, PCBs, Priority Organics, Contaminated Sediments, and Priority Organics

The following Daily Maximum limitations were established at Outfalls 007 and 010 based on the Upper Calcasieu Estuary Toxics TMDL for Outfalls 007 and 010.

Outfall 007	
Total Copper	0.051462432 lbs/day, daily maximum
Total Mercury	0.000353889 lbs/day, daily maximum
Hexachlorobutadiene	0.005470416 lbs/day, daily maximum
PCB - 1254	0.000000514 lbs/day, daily maximum
1,1,2,2-Tetrachlorethane	0.09252432 lbs/day, daily maximum
Bromoform	1.7829504 lbs/day, daily maximum
Hexachlorobenzene	0.000012832 lbs/day, daily maximum

Outfall 010	
Total Copper	0.0707898 lbs/day, daily maximum
Total Mercury	0.000486796 lbs/day, daily maximum
Hexachlorobutadiene	0.0075249 lbs/day, daily maximum
PCB - 1254	0.000000707 lbs/day, daily maximum
1,1,2,2-Tetrachlorethane	0.127273 lbs/day, daily maximum
Bromoform	2.45256 lbs/day, daily maximum
Hexachlorobenzene	0.000017651 lbs/day, daily maximum

Organic Enrichment/ Low Dissolved Oxygen, Nutrients, and Phosphorus

The LDEQ TMDL for Dissolved Oxygen (July 1, 2002) suggests that the waterbody is meeting its uses at existing loadings, therefore, the BOD_5 limitations for Outfall 007 are proposed without increment. As with Outfall 007, the Bayou D'Inde D.O. TMDL also applies to Outfall 010. However, since the proposed technology based limitations for D.O. are less than limitations established in the previous permit, the technology limitations based on current process flows apply.

Monitoring frequencies for water quality based limited parameters are established in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

Site-Specific Consideration(s)

OUTFALL 007

TMDL parameters were incorporated due to the Upper Calcasieu Estuary TMDL for Toxics issued in the Federal Register on June 13, 2002. A Report only requirement has been placed on the following parameters lasting from the effective date of the permit until June 12, 2008.

Interim requirements	
Total Copper	Report lbs/day, daily maximum
Total Mercury	Report lbs/day, daily maximum
PCB - 1254	Report lbs/day, daily maximum

1,1,2,2-Tetrachlorethane	Report lbs/day, daily maximum
Bromoform	Report lbs/day, daily maximum

Hexachlorobenzene and Hexachlorobutadiene were assigned pre-TMDL water quality based limitations (See Appendix B-1).

Hexachlorobenzene	0.000072 lbs/day, daily max
	0.000171 lbs/day, monthly avg
Hexachlorobutadiene	0.010101 lbs/day, daily max
	0.023980 lbs/day, monthly avg

The following TMDL effluent limitations shall become effective on June 13, 2008.

Final requirements

Total Copper	0.051462432 lbs/day, daily maximum
Total Mercury	0.000353889 lbs/day, daily maximum
Hexachlorobutadiene	0.005470416 lbs/day, daily maximum
PCB - 1254	0.000000514 lbs/day, daily maximum
1,1,2,2-Tetrachlorethane	0.09252432 lbs/day, daily maximum
Bromoform	1.7829504 lbs/day, daily maximum
Hexachlorobenzene	0.000012832 lbs/day, daily maximum

CALCULATIONS FOR OUTFALL 007

Please refer to Appendices D and E for further details on the TMDL. The values used in the calculations below were taken from Appendix E of the original TMDL and are attached in this document as Appendix E.

TMDL Loading (Outfall Specific) = TMDL Outfall Flow * Assimilative Capacity per MGD Process Flow

Outfall 007 Process Flow Used (value in the TMDL) = 0.67536 MGD

TMDL PARAMETER	PROCESS FLOW USED IN TMDL (MGD)	ASSIMILATIVE CAPACITY LOAD PER MGD PROCESS FLOW	OUTFALL SPECIFIC LOADING LBS/DAY, DAILY MAXIMUM
Total Copper	0.67536	0.0762	0.051462432
Total Mercury	0.67536	0.000524	0.000353889
Hexachlorobutadiene	0.67536	0.0081	0.005470416
PCB - 1254	0.67536	0.000000761	0.000000514
1,1,2,2-Tetrachlorethane	0.67536	0.137	0.09252432
Bromoform	0.67536	2.64	1.7829504
Hexachlorobenzene	0.67536	0.000019	0.000012832

OUTFALL 010

TMDL parameters were incorporated due to the Upper Calcasieu Estuary TMDL for Toxics issued in the Federal Register on June 13, 2002. A Report only requirement has been placed on the following parameters lasting from the effective date of the permit until June 12, 2003.

Interim requirements	
Total Copper	Report lbs/day, daily maximum
Total Mercury	Report lbs/day, daily maximum
PCB - 1254	Report lbs/day, daily maximum
1,1,2,2-Tetrachlorethane	Report lbs/day, daily maximum
Bromoform	Report lbs/day, daily maximum

Hexachlorobenzene and Hexachlorobutadiene were assigned pre-TMDL water quality based limitations (See Appendix B-2).

Hexachlorobenzene	0.00006 lbs/day, daily max
	0.000143 lbs/day, monthly avg
Hexachlorobutadiene	0.008194 lbs/day, daily max
	0.019454 lbs/day, monthly avg

The following TMDL effluent limitations shall become effective on June 13, 2008.

Final requirements	
Total Copper	0.0707898 lbs/day, daily maximum
Total Mercury	0.000486796 lbs/day, daily maximum
Hexachlorobutadiene	0.0075249 lbs/day, daily maximum
PCB - 1254	0.000000707 lbs/day, daily maximum
1,1,2,2-Tetrachlorethane	0.127273 lbs/day, daily maximum
Bromoform	2.45256 lbs/day, daily maximum
Hexachlorobenzene	0.000017651 lbs/day, daily maximum

CALCULATIONS FOR OUTFALL 010

Please refer to Appendices D and E for further details on the TMDL. The values used in the calculations below were taken from Appendix E of the original TMDL and are attached in this document as Appendix E.

TMDL Loading (Outfall Specific) = TMDL Outfall Flow * Assimilative Capacity per MGD. Process Flow

010 Process Flow Used (value in the TMDL) = 0.929 MGD

TMDL PARAMETER	PROCESS FLOW USED IN TMDL (MGD)	ASSIMILATIVE CAPACITY LOAD PER MGD PROCESS FLOW	OUTFALL SPECIFIC LOADING LBS/DAY, DAILY MAXIMUM
Total Copper	0.929	0.0762	0.0707898
Total Mercury	0.929	0.000524	0.000486796
Hexachlorobutadiene	0.929	0.0081	0.0075249
PCB - 1254	0.929	0.000000761	0.000000707
1,1,2,2-Tetrachlorethane	0.929	0.137	0.127273
Bromoform	0.929	2.64	2.45256
Hexachlorobenzene	0.929	0.000019	0.000017651

D. Whole Effluent Toxicity Limits

1. General Comments

The provisions of this section apply to Outfall(s) 007 and 010

Whole effluent toxicity testing conducted by the permittee has shown potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body, at the appropriate instream critical dilution. Pursuant to LAC 33:IX.2707.D.1.e/40 CFR 122.44(d)(1)(v), this Office has determined that the discharge from this facility does have the reasonable potential to cause, or contribute to an instream excursion above the narrative criterion within the applicable State water quality standards, in violation of Section 101(a)(3) of the Clean Water Act. Furthermore, this Office has determined that chemical specific limitations alone are not sufficient to maintain the applicable numeric and narrative State water quality standards. The State has established a narrative water quality criteria which, in part, states that

> "No substances shall be present in the waters of the state or the sediments underlying said waters in quantities that alone or in combination will be toxic to human, plant, or animal life or significantly increase health risks due to exposure to the substances or consumption of contaminated fish or other aquatic life." (Louisiana Surface Water Quality Standards, LAC Title 33, Part IX, Chapter 11, Section 1113.B.5.)

The following summarizes toxicity test failures submitted by the permittee during the current term of the permit:

Sixteen tests were performed for Cyprinodon variegatus (sheepshead minnow) and Mysidopsis bahia (mysid shrimp). No failed test were reported in the last 5 years for either species.

2. Permit Action

a. Testing and Reporting Requirements

The draft permit establishes the following testing and reporting requirements:

TOXICITY TESTS	FREQUENCY
Chronic static renewal 7-day survival and reproduction test using Mysidopsis bahia [Method 1007.0]	1/quarter
Chronic static renewal 7-day larval survival and growth test using fathead minnow (Menidia beryllina) [Method 1006.0]	1/quarter

The draft permit additionally requires the reporting of the coefficient of variation (larger of the low flow and control dilutions) for each test species.

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to provide data representative of the facility's discharge in accordance with regulations listed at LAC 33:IX.2715/40 CFR 122.48 and to assure compliance with permit limitations following regulations listed at LAC 33:IX.2707.I.1/40 CFR 122.44(I)(1).

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and salinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit.

b. Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 8%, 6%, 4%, 3%, and 2%. The low-flow effluent concentration (critical dilution) is defined as 6% effluent.

c. Effluent Limitations and/or Conditions

(1) Final Requirements

The draft permit establishes final whole effluent toxicity limitations and monitoring requirements beginning the effective date of this permit.

(2) Discussion

Chronic marine biomonitoring was established in the final LPDES permit no. LA0071382, issued March 9, 2000, with an effective date of April 1, 2000, and an expiration date of March 31, 2005. for Outfall(s) 007 and 010.

A Total Maximum Daily Load (TMDL) has been developed for the receiving stream, Bayou D'Inde, which recommends that all majors and significant minor dischargers to Bayou D'Inde test effluents for chronic toxicity at least quarterly to demonstrate that unmonitored pollutants or the combination of monitored and/or unmonitored pollutants are not causing instream toxicity.

It is recommended that marine chronic biomonitoring with a WET limit continue to be an effluent characteristic of Outfall 007 (discharge of 0.6783 MGD of treated process wastewater, process and nonprocess area stormwater, once-through non-contact cooling water, cooling tower blowdown, steam production, boiler blowdown, and general facility washwater) and Outfall 010 (discharge of 0.5227 MGD of treated process wastewater, process and nonprocess area stormwater, once-through non-contact cooling water, cooling tower blowdown, boiler blowdown, and general facility washwater) in LA0071382. Samples will be taken from the flow-weighted composite of Outfalls 007 and 010. The effluent dilution series shall be 2%, 3%, 4%, 6%, and 8% concentrations, with 6% being defined as the critical dilution and/or WET limit. The recommended biomonitoring frequency shall be once per quarter for Mysidopsis bahia and Menidia beryllina. The Permittee has passed all Cyprinodon variegatus and Mysidopsis bahia survival and sub-lethal tests at the 5.9% effluent concentration for the previous five years. Therefore, consistent with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies (Revised June 30, 2000), LDEQ recommends that this facility be eligible to receive a frequency reduction, provided the following conditions are met:

If there are no significant lethal or sub-lethal effects demonstrated at or below the critical dilution during the first four quarters of testing, the permittee may certify fulfillment of the WET testing requirements to the permitting authority and WET testing may be reduced to not less than once per six months for the more sensitive species (Mysidopsis bahia) and not less than once per year for the less sensitive species (Menidia beryllina) for the remainder of the term of the permit. Upon expiration of the permit, the monitoring frequency for both test species shall revert to once per quarter until the permit is re-issued.

E. MONITORING FREQUENCIES

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I./40 CFR 122.44(I)]. The following section(s) explain the rationale for the monitoring frequencies stated in the draft permit.

1. Outfalls 007 and 010 - Process Wastewaters

* Outfall 007 - the discharge of treated process wastewater from Poly II including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow waster; process area stormwater; non-process area stormwater including runoff from the centerline of the Equistar Chemical LP road located to the immediate west; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, steam production, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and cooling tower pump seal leakage and drift water.

* Outfall 010 - the discharge of treated process wastewater from Poly I including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow waster; process area stormwater; non-process area stormwater; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and laboratory wastewater

Flow and pH shall be monitored continuously. The following pollutants are to be monitored once/week.

Parameter(s):
BOD
TSS
Oil & Grease

A monitoring frequency of once/quarter for the following listed toxic pollutants is considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7. These parameters were established by the Upper Calcasieu Estuary Toxics TMDL.

Parameter(s):
PCB - 1254
1,1,2,2-Tetrachloroethane
Total Copper
Total Mercury
Bromoform

Hexachlorobenze
Hexachlorobutadiene
1,3 - Dichloropropylene

Toxic pollutants not expected to be on-site are proposed to be monitored once per year.

2. Outfall(s) 011 and 012 - Stormwater & Utility

* Outfall 011 - the discharge of non-process area stormwater (including stormwater runoff from the centerline of the Equistar road located to the immediate west); intermittent post first-flush stormwater from Poly I & II process and non-process areas (during storm events of high intensity and/or extended duration; overflow may occur after 1.25 inches of rainfall into sumps 002 and 003 and after 2.0 inches into sump 008); and miscellaneous de minimis discharges including excess well water, fire system test water, cooling tower pump seal leakage and drift, and eye wash and shower station water.

* Outfall 012 - the discharge of the previously monitored effluents authorized for discharge through Outfalls 007 and 010; the intermittent discharge of non-process area stormwater including stormwater runoff from the undeveloped grassy area of the Equistar property to the immediate south; miscellaneous de minimis discharges including fire system test water, eye wash/safety shower water, and firewater storage tank intermittent overflow (well water); and low contamination potential stormwater from former Outfalls 004, 005, and 006.

Non-process area stormwater and miscellaneous de minimis utility wastewater discharges through a discrete outfall, will receive monitoring frequencies according to the following schedule:

All parameters - 1/month, when discharging

X. Compliance History/DMR Review:

A compliance history/dmr review was conducted covering the period of January 2002 through March 2005. The following excursions were reported by the facility:

Date	Parameter	Outfall	Reported Value	Permit Limits
3/1/02	pH	011	5.8 s.u.	6.0 - 9.0 s.u.
3/1/02	Oil & Grease	011	31.7 mg/L dly max	15 mg/L dly max
3/1/02	pH	005	5.9 s.u.	6.0 - 9.0 s.u.
6/1/02	TSS	007	668.99 lbs/day dly max	480 lbs/day dly max
6/1/02	TSS	010	1677.8 lbs/day dly max	464 lbs/day dly max
11/1/02	pH	001	5.15 s.u.	6.0 - 9.0 s.u.
11/1/02	pH	005	9.39 s.u.	6.0 - 9.0 s.u.
4/1/03	Bis(2-Ethylhexyl) Phthalate	007	0.18 lbs/day mo avg.	0.10 lbs/day mo avg
11/1/04	TSS	010	727.78 lbs/day dly max	464 lbs/day dly max
12/1/04	BOD	007	119.55 lbs/day dly max	113 lbs/day dly max

Inspections

March 16, 2004
An annual facility inspection was conducted on March 16, 2004. The inspector noted trace amounts floating solids/particles in the discharge at Outfall 010. The facility plans to install a new filtration system to address the trace amounts of solids. There were no other areas of concern.

March 28, 2005
An annual facility inspection was conducted on March 28, 2005. The inspector did not note any areas of concern.

XI. "IT" Questions - Applicant's Responses

Refer to Westlake's September 2004 LPDES renewal application, Appendix D, for the IT Questions and Westlake's responses.

XII. Endangered Species:

The receiving waterbody, Subsegment 030901 of the Calcasieu River Basin is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated September 29, 2004 from Watson (FWS) to Gautreaux (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

XIII. Historic Sites:

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

XIV. Tentative Determination:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to permit for the discharge described in the application.

XV. Variances:

No requests for variances have been received by this Office.

XVI. Public Notices:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet. A request for a public hearing shall be in writing and

shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

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